WATERSHED MANAGEMENT AREA 14

MULLICA RIVER DRAINAGE

The watershed management area includes watersheds draining portions of the Pinelands of New Jersey. Major rivers include the Mullica, the Wading River, Nochescatauxin Brook, Atsion Creek, the Bass River, Batsto River, Nescochaque Creek, Landing Creek, Hammonton Creek and the Oswego River. The area lies in Burlington and Atlantic Counties and includes the following watersheds:

Mullica River	Wading River	Batsto River
Mechesactauxin Creek	Atsion Creek	Doughty Creek

Summary of ambient physical/chemical monitoring stations and classifications

Station	Classification
West Branch Wading River at Maxwell	Pinelands Waters
Oswego River at Harrisville	Pinelands Waters
East Branch Bass River at New Gretna	Pinelands Waters
Mullica River at outlet of Atsion Lake	Pinelands Waters
Batsto River at Batsto	Pinelands Waters
Hammonton Creek at Wescoatville	Pinelands Waters

The following monitoring locations have been discontinued as of 1991:
Mullica River at Green Bank (Pinelands Waters)

OVERALL MANAGEMENT AREA ASSESSMENT

- Swimmable Support Status:

WATERWAY	LOCATION	STATUS
W Br Wading River	at Maxwell	Full Support
Oswego River	at Harrisville	Full Support
E Br Bass River	at New Gretna	Full Support
Mullica River	outlet of Atsion Lake	Full Support
Batsto River	at Batsto	Full Support
Hammonton Creek	at Wescoatville	Partial Support

- Summary of Aquatic Life Support Status (Number of stations within each assessment category). Note: See the Biological Assessment Table located at the end of this section for details regarding macroinvertebrate assessments within the watershed management area.

No Impairment: 23 Mod. Impairment: 27 Severe Impairment: 6

MAPS here

WATERSHED DESCRIPTION

The Mullica River and tributaries are considered the primary drainage system for the Pinelands. The total area of the drainage basin (Mullica River and tributaries) is some 561 square miles. Major tributaries within the watershed include the Wading River, Nochescatauxin Brook, Atsion Creek, the Bass River, Batsto River, Nescochaque Creek, Landing Creek, Hammonton Creek and the Oswego River. The Mullica River empties into Great Bay, a large estuarine system. The population centers are Winslow, Galloway and Hammonton.

About 80 percent of this watershed consists of state parks and forests, with the remainder being agricultural and developed areas. Of the approximately 7 NJPDES permitted discharges here, roughly half are municipal/ institutional and half are industrial/commercial. The streams are classified FW-Pinelands Waters, FW-1, FW-2 Nontrout and SE-1. Much of these waterways are incorporated in the New Jersey Wild and Scenic River System.

WATER QUALITY ASSESSMENT

Physical/Chemical Water Quality

Location: Mullica River at Atsion Lake

Dissolved Oxygen: Acceptable.

Temperature: Summer-time temperatures tend to run high. Insteam temperatures around 25° C and higher are commonly recorded.

Nutrients: The median inorganic nitrogen (NO_2 + NO_3) level was characteristic of moderately disturbed Pinelands waters. Current levels may be higher than levels observed at this site by Zampella (1994). The median of organic nitrogen levels was at the high end of levels encountered in moderately disturbed Pinelands waters. Ammonia, in contrast, was at undisturbed levels. Total phosphorus was characteristic of undisturbed Pinelands waters and was consistent with levels observed between 1975 and 1986 (Zampella 1994).

pH and Conductivity: The median pH was between undisturbed and moderately disturbed conditions. Specific conductance was at the lower end of moderately disturbed conditions.

Bacteria: Fecal coliform levels were very low with a geometric mean calculated to be 20 MPN/100ml.

Heavy Metals: Heavy metals violations were frequent in these acid waters, especially during the early period of review. Two of five copper samples exceeded the acute and chronic criteria. Of five lead samples, two exceeded both the acute and chronic criteria, while two others violated the chronic criteria. One violation of the acute and chronic criteria for zinc was recorded (out of five samples).

Summary: Current pH, conductance, and nutrient levels are generally at levels similar to those observed prior to 1986. One concern are the levels of $NO_2 + NO_3$, which may be slightly on the rise as compared to pre-1987 levels. Another concern is the high summertime in-stream temperatures which may be detrimental to aquatic life. The Mullica as monitored at Atsion Lake represents a moderately disturbed Pinelands waterbody but with the possible exception of inorganic nitrogen, reflects conditions as recorded prior to 1987. Copper, lead and zinc appear to be a problem during the early portion of the current review period. Sanitary quality is very good.

Location: Hammonton Creek at Wescoatville

Dissolved Oxygen: Daytime levels can be very poor; twenty percent of the records between 1991 and 1995 were below 4 mg/l. Because these are daytime recordings, it is assumed that nighttime conditions are much worse, when oxygen generation from photosynthesis is not active.

Nutrients: Levels of total ammonia, organic nitrogen, and inorganic nitrogen were all indicative of severely disturbed Pinelands conditions. The median inorganic nitrogen ($NO_2 + NO_3$) was 2.9 mg/l, with 78% of samples exceeding the 2.0 mg/l criterion.

Median total phosphorus was 0.435 mg/l, and all records exceeded 0.1 mg/l. These phosphorus levels are extremely high, even for northern New Jersey waterbodies, not to mention Pinelands waters.

pH and Conductivity: Both the median pH and specific conductance were indicative of severely disturbed conditions. Almost all pH records were above the 5.5 SU limit for Pinelands waters.

Bacteria: Fecal coliform levels were moderate, with a geometric mean calculated to be 78 MPN/100ml and 25% of the samples exceeding the 400 MPN/100ml criterion.

Heavy Metals: Heavy metals violations were frequent at this location. All five copper samples exceeded both the acute and chronic criteria. All five lead samples violated the chronic criteria for this metal. Finally, two of five zinc records either equaled or closely approached their chronic criteria.

Summary: Hammonton Creek is the only waterway in the Mullica drainage with significant pollution problems. The creek is subjected to a significant municipal point source discharge which still has degraded water quality. The creek at Wescoatville is in very poor condition, with severely reduced dissolved oxygen, elevated nutrients, and pH not reflective of typical Pinelands water. During summer months water quality worsens to yet even poorer conditions. Daytime dissolved oxygen approached 3 mg/l in summer months. Copper, lead, and zinc appear to be a problem at this location.

Regardless of the poor conditions here, some limited water quality improvements have been recorded as reflected in biochemical oxygen demand (BOD), which has been notably reduced as compared to prior assessments. In the prior assessment (1986 through 1990), BOD values were frequently

above 4.0 mg/l. Under current conditions, only one record of 20 exceeded 4.0 and the median value was 1.6 mg/l. Upgrades in the Hammonton STP (see Point Source Assessment, below) are likely to be behind this change. Overall improvements in in-stream water quality, however, in terms of dissolved oxygen, nutrient levels, pH alterations, and metal contamination, have yet to be recorded.

Hammonton Creek has been listed by the Department as an impaired waterway due to toxic discharges emanating from point sources. The contaminants of concern are arsenic, mercury, cadmium, lead, zinc and nickel. The criteria violated are USEPA's Federal Aquatic Life chronic criteria, USEPA's Federal Human Health/water and fish ingestion criteria, and USEPA's Federal human health criteria. Current status must await a re-analysis of conditions.

Location: East Branch Bass River near New Gretna

Dissolved Oxygen: Acceptable.

Temperature: Acceptable.

Nutrients: The median inorganic nitrogen (NO_2 + NO_3), organic nitrogen, ammonia, and total phosphorus levels were characteristic of undisturbed Pinelands waters (Zampella 1992).

pH and Conductivity: The median pH and specific conductance were characteristic of the lower end of moderately disturbed conditions (Zampella 1992). This should be cause of concern. This station is characterized as indicative of low land use intensity (Zampella 1994) based upon data collected before 1987; hence, any future investigations should focus on more recent (late 1980s to present) water quality trends in dissolved solids at this location.

Bacteria: Fecal coliform levels were very low, with a geometric mean calculated to be 26 MPN/100ml.

Heavy Metals: Heavy metals violations were frequent in these acid waters, especially during the early period of review. One of five copper samples exceeded the acute and chronic criteria. Of six lead samples, two exceeded both the acute and chronic criteria. Two samples out of six violated the acute and chronic criteria for zinc.

Summary: Current nutrient levels are generally similar to those observed prior to 1987. Of concern are the levels of pH and conductance, which may be slightly higher (indicative of less acid conditions) as compared to pre-1987 levels. Prior to 1987, this location was characteristic of undisturbed Pinelands conditions (Zampella, 1994). Current pH and conductance levels are more suggestive of moderately disturbed conditions. Copper, lead and zinc appear to be a problem during the early portion of the current review period at this location. Sanitary quality is very good.

Location: Batsto River at Batsto

Dissolved Oxygen: Acceptable.

Nutrients: The median inorganic nitrogen (NO_2 + NO_3) level was characteristic of moderately disturbed Pinelands waters (Zampella, 1992), but was higher than the upper third quartile of the distribution recorded by Zampella (1992) using data collected prior to 1987, suggesting that this constituent may be at higher in-stream levels now than in the past.

In contrast, the medians of organic nitrogen and ammonia levels, as well as total phosphorus, were characteristic of undisturbed Pineland levels (Zampella 1992) and similar to conditions observed prior to 1987 (Zampella, 1994).

pH and Conductivity: The median pH was characteristic of the upper end of moderately disturbed conditions (Zampella 1992). Five of twenty records were above the upper (5.5 SU) criterion for Pinelands waters. The current median pH recorded was above the upper (third) quartile reported by Zampella (1994) using data collected prior to 1987. This suggests that the pH levels might be increasing at this location.

Median value for specific conductance was characteristic of the lower end of moderately disturbed conditions (Zampella 1992) and was similar to values recorded from data collected prior to 1987 (Zampella, 1994).

Bacteria: Fecal coliform levels were very low, with a geometric mean calculated to be 29 MPN/100ml.

Heavy Metals: Heavy metals violations were observed, all during the early period of review. One of five copper samples exceeded the acute and chronic criteria. One of five lead samples exceeded the chronic criteria, and one zinc record (of five) violated both the acute and chronic zinc criteria.

Summary: Organic nitrogen and ammonia levels, as well as total phosphorus, were characteristic of undisturbed Pinelands levels and are similar to conditions observed prior to 1987. The inorganic nitrogen median was characteristic of moderately disturbed Pinelands waters but appeared higher than the distribution recorded from data collected prior to 1987, suggesting that this constituent may be at higher in-stream levels now than in the past.

Also of concern are pH levels which may be slightly higher (indicative of less acid conditions) as compared to pre-1987 levels. Current specific conductance levels are suggestive of moderately disturbed conditions and resemble past records. Copper, lead and zinc appear to be a problem during the early portion of the current review period. Sanitary quality is very good.

Location: Oswego River at Harrisville

Dissolved Oxygen: Acceptable.

Nutrients: Ammonia, organic nitrogen, and total phosphorus medians were all at undisturbed Pinelands levels (Zampella, 1992). Levels currently observed resembled levels observed before 1987 (Zampella, 1994). The median inorganic nitrogen (NO_2 + NO_3), however, was characteristic of moderately disturbed Pinelands waters and may be higher than pre-1987 records.

pH and Conductivity: The median pH and specific conductance were at levels characteristic of undisturbed conditions (Zampella, 1992) and resembled levels observed before 1987 (Zampella, 1994).

Bacteria: Fecal coliform levels were very low, with a geometric mean calculated to be 21 MPN/100ml.

Heavy Metals: Heavy metals violations were limited to one of three copper samples exceeding the acute and chronic criteria.

Summary: Levels of organic nitrogen and ammonia, as well as total phosphorus, were characteristic of undisturbed Pineland waters and are similar to conditions observed prior to 1987. The inorganic nitrogen median was characteristic of moderately disturbed Pinelands waters and appeared higher than the distribution recorded from data collected prior to 1987, suggesting that this constituent may be at higher in-stream levels now than in the past. Current specific conductance and pH levels are suggestive of undisturbed Pinelands conditions and resemble past records. Copper may be a problem at this location. Sanitary quality is very good.

Location: West Branch of the Wading River at Maxwell

Dissolved Oxygen: Acceptable.

Nutrients: Ammonia, inorganic and organic nitrogen, and total phosphorus medians were all at undisturbed Pinelands levels (Zampella, 1992). Levels currently observed resembled levels observed before 1987 (Zampella, 1994).

pH and Conductivity: The median pH was at levels characteristic of undisturbed conditions (Zampella, 1992), while specific conductance was at the low end of moderately disturbed conditions (Zampella, 1992). Both constituents resembled levels observed before 1987 (Zampella, 1994).

Bacteria: Fecal coliform levels were very low, with a geometric mean calculated to be 5.5 MPN/100ml.

Summary: Nutrient levels were characteristic of undisturbed Pinelands waters and are similar to conditions observed prior to 1987. The current specific conductance median was characteristic of mildly disturbed Pinelands waters, while pH levels are suggestive of undisturbed conditions. Both are represented at levels similar to those found in previous assessments. Sanitary quality is very good.

Biological Monitoring

The upper and lower Mullica watershed exhibits a mixture of non-impaired and moderately impaired monitoring locations (see the Biological Assessment Table located at the end of this section). Severely impaired sites are very limited within this management area. These sites are the upper Hammonton, Gun Branch in Hammonton, Great Swamp Brook in Winslow Township, Landing Creek in Egg Harbor City, West Branch of the Wading River in Woodland Township, Little Hauken Run and Mattix Run.

POINT SOURCE ASSESSMENT

The Mullica watershed contains surface waters that are extremely sensitive to the effects of man's activities. Both point and nonpoint sources can seriously alter the acid-tolerant stream environments of the watershed.

Reports of deleterious point source discharges are limited to the Hammonton Creek MUA which has historically been severely impacting Hammonton Creek with wastewater discharges of excess nutrients and oxygen-demanding substances and continues to be under enforcement action.

One hazardous waste site has in the past been identified in the Mullica watershed to be contaminating local surface waters. This is Woodland Chemical Dumps 1 and 2 near Chatsworth. The dumps were suspected of releasing volatile organics, pesticides, and metals to nearby cranberry bogs. The following wastewater treatment plant has been upgraded and/or expanded and renewed operation:

FACILITY	LOCATION	RECEIVING STREAM	COMMENTS
Hammonton STP	Hammonton, Atlantic Co.	Hammonton Creek	Substantial plant upgrades were completed in June 1994. Water quality is still impacted based upon water quality sampling, especially for pH, phosphorus and ammonia. A permitting decision is pending as to whether the discharge will continue to surface water or if Hammonton will be required to discharge to ground water.

NONPOINT SOURCE ASSESSMENT

Agricultural and suburban runoff can have significant impacts on the water quality of Pinelands waters by adding nutrients and raising stream pH. This appears to be occurring throughout the Pinelands region in various waterways.

The Upper Mullica is reported to suffer water quality problems caused by moderate amounts of nonpoint source contamination from construction activities, surface mining and landfills. Also reported is a problem with ditch bank erosion in drainage ditches associated with cropland areas. The Upper Mullica, Sleeper Branch, Gum Branch, and Albertsons Branch are all suspected of being impacted by road and highway runoff.

In the Mid-Mullica, runoff from croplands has been suspected to be an occasional water quality problem, although it was reported to be on the decline. As in the Upper Mullica, there are problems with ditch bank erosion. Hammonton Creek is suspected of being impacted on occasion by leachate from land disposal sites, urban runoff, as well as runoff from construction sites. Landing Creek, Indian Cabin Creek, and Union Creek are all reported to be impacted by moderate amounts of urban stormwater runoff. Landing Creek is also suspected to be impacted by occasional leachate from local landfills.

In the Lower Mullica/Great Bay sub-watersheds, the Wading River has been suspected of being severely impacted by hazardous waste sites. The problem had been reported to be increasing and impairing the local fisheries. Surface mining, although evaluated as being in decline, is known to be causing occasional turbidity in Morses Mill Creek, a tributary to Great Bay. Matix Run, also a Great Bay tributary, is suspected of being impacted by runoff from housing construction sites and stormwater. To the northeast, the Oswego River is reported by local authorities to have no observable nonpoint source pollution problems.

The only lake evaluated in the Mullica watershed was Hammonton Lake. Here, runoff from urban surfaces, roads, and storm sewers is believed to be impacting the lake's water quality.

DESIGNATED USE ASSESSMENT

Five of the six physical/chemical monitoring locations (Mullica, Bass, Batsto, Oswego, and Wading Rivers) indicate very good sanitary quality and full support of the primary contact (swimming) designated use. Only Hammonton Creek at Wescoatville shows marginal sanitary quality and only partially supports the use.

Most waters in the Mullica River system either fully support or partially support the aquatic life support designated use. There are some exceptions where there is severe impairment and no support of use, and these are delineated above in the discussion of biological monitoring.

Tidal sections of the Mullica River and tributaries are classified as "special restricted," "seasonal," or "fully approved" with regard to shellfish harvesting, depending on location. The Mullica itself is classified as special restricted above Moss Point. Between Moss Point and Doctors Point, the waters are "seasonal restricted." Downstream of Doctors Point, the waters are "fully approved" for shellfish harvesting. The Mullica system ultimately flows into Great Bay where the waters are classified as "fully approved" for shellfish harvesting.

BIOLOGICAL ASSESSMENT TABLE: AREA 14

Mgt Area	Watershd	Site ID	Water Body	Location	Municipality	Sample Date	Biological Impairment Rating
14	80	AN0560	Mullica R	Jackson - Medford Rd	Waterford Twp	Mar 9, 1995	moderately impaired
14	80	AN0561	Mullica R	Jackson Rd	Waterford Twp	Mar 9, 1995	moderately impaired
14	80	AN0562	Mullica R	Burnt House Rd	Shamong Twp	Mar 9, 1995	non-impaired
14	80	AN0563	Wesickamon Ck	Atsion-Quakerbridge Rd	Atsion	Feb 23, 1995	moderately impaired
14	80	AN0564	Mullica R	Constable Bridge	Mullica Twp	Feb 23, 1995	moderately impaired
14	80	AN0565	Hays Mill Ck	Tremont Ave	Waterford Twp	Mar 16, 1995	non-impaired
14	80	AN0566	Sleeper Br	Parkdale	Waterford Twp	Mar 16, 1995	non-impaired
14	80	AN0567	Clarks Br	Burnt Mill Rd	Waterford Twp	Mar 16, 1995	moderately impaired
14	80	AN0568	Prices Br	Burnt Mill Rd	Waterford Twp	Apr 4, 1991	moderately impaired
14	80	AN0568	Prices Br	Burnt Mill Rd	Waterford Twp	Mar 16, 1995	moderately impaired
14	80	AN568G	Gun Br	Rt 206	Hammonton	Jan 29, 1992	severely impaired
14	80	AN0569	Pump Br	Old White Horse Pike	Winslow Twp	Mar 23, 1995	moderately impaired
14	80	AN0570	Blue Anchor Bk	Rt 30	Winslow Twp	Mar 28, 1995	moderately impaired
14	80	AN0571	Albertson Bk	Wharton Ave	Waterford Twp	Mar 23, 1995	moderately impaired
14	80	AN0572	Albertson Bk	Old Bridge Crossing	Hammonton	Mar 23, 1995	non-impaired
14	80	AN0573	Gr Swamp Br	Rt 30	Winslow Twp	Mar 23, 1995	severely impaired
14	80	AN0574	Gr Swamp Br	Rt 206	Hammonton	Mar 16, 1995	non-impaired
14	80	AN0575	Cedar Bk	Myrtle Ave	Hammonton	Mar 23, 1995	moderately impaired
14	80	AN0576	Nescochague Ck	Pleasant Mills	Mullica Twp	Mar 28, 1995	non-impaired
14	80	AN0577	Hammonton Ck	Boyer Rd (blw STP)	Hammonton	Jan 29, 1992	severely impaired
14	80	AN577A	Hammonton Ck	Rt 542 (abv STP)	Hammonton	Jan 29, 1992	moderately impaired
14	80	AN0578	Hammonton Ck	Columbia Rd	Mullica Twp	Jan 29, 1992	non-impaired
14	70	AN0579	Batsto R	Carranza Rd	Shamong Twp	Feb 16, 1995	non-impaired
14	70	AN0580	Roberts Br	Carranza Rd	Shamong Twp	Feb 16, 1995	moderately impaired
14	70	AN0581	Skit Br	Carranza Rd	Shamong Twp	Jan 23, 1992	moderately impaired
14	70	AN0581	Skit Br	Carranza Rd	Shamong Twp	Feb 16, 1995	moderately impaired
14	70	AN0582	Indian Mills Bk	Willow Grove Rd	Indian Mills	Feb 16, 1995	moderately impaired
14	70	AN0583	Muskingum Bk	Tabernacle Rd	Indian Mills	Feb 22, 1995	moderately impaired

BIOLOGICAL ASSESSMENT TABLE continued:

Mgt Area	Watershd	Site ID	Water Body	Location	Municipality	Sample Date	Biological Impairment Rating
14	70	AN0584	Springers Bk	Rt 206	Shamong Twp	Feb 16, 1995	moderately impaired
14	70	AN0585	Springers Bk	Hampton Rd	Shamong Twp	Feb 16, 1995	moderately impaired
14	70	AN0586	Batsto R	Quaker Bridge	Washington Twp	Feb 22, 1995	moderately impaired
14	70	AN0587	Penn Swamp Br	Quaker Bridge - Batsto Rd	Washington Twp	Feb 22, 1995	non-impaired
14	70	AN0587	Penn Swamp Br	Quaker Bridge - Batsto Rd	Washington Twp	May 12, 1995	moderately impaired
14	70	AN0587	Penn Swamp Br	Quaker Bridge - Batsto Rd	Washington Twp	Aug 8, 1995	non-impaired
14	70	AN0587	Penn Swamp Br	Quaker Bridge - Batsto Rd	Washington Twp	Nov 2, 1995	non-impaired
14	70	AN0588	Batsto R	Rt 542	Batsto	Feb 22, 1995	non-impaired
14	80	AN0589	Lucas Br	Pleasant Mills - Weekstown Rd	Mullica Twp	Mar 28, 1995	non-impaired
14	80	AN0590	Landing Ck	Rt 30	Egg Harbor City	Apr 6, 1995	severely impaired
14	80	AN0591	Elliots Ck	Bremen Ave	Egg Harbor City	Mar 28, 1995	non-impaired
14	80	AN0592	Landing Ck	Indian Cabin Rd	Mullica Twp	Mar 28, 1995	non-impaired
14	80	AN0593	Indian Cabin Ck	Fifth Ave	Mullica Twp	Apr 6, 1995	moderately impaired
14	80	AN0594	Indian Cabin Ck	EHC Lk outlet	Egg Harbor City	Mar 28, 1995	non-impaired
14	66	AN0595	Wading R W Br	Rt 532	Woodland Twp	Jan 24, 1995	severely impaired
14	66	AN0596	Wading R W Br	Rt 563	Washington Twp	Apr 4, 1991	severely impaired
14	66	AN0596	Wading R W Br	Rt 563	Washington Twp	Jan 24, 1995	moderately impaired
14	66	AN0597	Shoal Br	Jones Mill Rd	Woodland Twp	Jan 26, 1995	moderately impaired
14	66	AN0598	Mile Run	Hawkins - Speedwell Rd	Washington Twp	Jan 26, 1995	moderately impaired
14	66	AN0599	Tulpehocken Ck	Carranza Rd	Tabernacle Twp	Jan 23, 1992	moderately impaired
14	66	AN0600	Tulpehocken Ck	Maxwell - Friendship Rd	Washington Twp	Jan 26, 1995	moderately impaired
14	66	AN0601	Ltl Hauken Run	Rt 563	Washington Twp	Jan 24, 1995	severely impaired
14	66	AN0602	Wading R W Br	Rt 563	Washington Twp	Jan 24, 1995	non-impaired
14	66	AN0603	Oswego R	Rt 539	Barnegat Twp	Jan 18, 1995	moderately impaired
14	66	AN0604	Plains Br	Jenkins Rd	Bass R Twp	Jan 18, 1995	non-impaired
14	66	AN0605	Papoose Br	Jenkins Rd	Washington Twp	Jan 18, 1995	non-impaired
14	66	AN0606	Oswego R	Andrews Rd	Oswego Lk	Jan 18, 1995	moderately impaired

BIOLOGICAL ASSESSMENT TABLE continued:

Mgt Area	Watershd	Site ID	Water Body	Location	Municipality	Sample Date	Biological Impairment Rating
14	66	AN0607	Oswego R	Spur 563	Harrisville	May 16, 1991	non-impaired
14	66	AN0607	Oswego R	Spur 563	Harrisville	Sep 23, 1991	non-impaired
14	66	AN0607	Oswego R	Spur 563	Harrisville	Dec 9, 1991	non-impaired
14	66	AN0607	Oswego R	Spur 563	Harrisville	Mar 3, 1992	moderately impaired
14	66	AN0608	Arnolds Br	Spur 563	Bass R Twp	Jan 12, 1995	moderately impaired
14	66	AN0609	Tub Mill Br	Spur 563	Bass R Twp	Jan 12, 1995	moderately impaired
14	66	AN0610	Bass R W Br	Stage Rd	Bass R Twp	Jan 12, 1995	non-impaired
14	66	AN0611	Dan's Bridge Br	Dan's Bridge Rd	Bass R Twp	Jan 12, 1995	non-impaired
14	66	AN0612	Bass R E Br	Stage Rd	Bass R Twp	Jan 12, 1995	non-impaired
14	66	AN0613	Clarks Mill Stream	Rt 575	Port Republic	Apr 6, 1995	non-impaired
14	66	AN0614	Morses Mill Stream	Riverside Dr	Port Republic	Apr 6, 1995	non-impaired
14	66	AN0615	Mattix Run	Moss Mill Rd	Galloway Twp	Apr 6, 1995	severely impaired